EDC430 Enriching Lessons with Technology

The focus of these lessons is on the students using technology to learn, not only the teachers. Ask yourself how students might use the Smartboard for learning, not just to use it as a very expensive whiteboard. What other uses of technology have you experienced that appear to be more teacher focused? (Think of overhead projectors… e.g. how could students use an overhead projector to learn about similarity?)

Why use technology in the **learning** of mathematics?

* Technology is dominant in kids’ lives
* Allows for strong interdisciplinary links, especially with science
* Is a level of abstraction above concrete materials and thus can scaffold toward higher levels of abstraction
* Allows for constraining the learning environment, thus promoting certain types of thinking purposefully
* Promotes discourse among students and between students and teachers
* Allows for addressing “what if…” questions from students in very little time, which increases student engagement (we’re investigating their problems now) and allows students to focus on thinking
* May remove the tedium out of ordinary tasks and thus allow for more time for higher cognitive processes and problem solving
* Technology can often address concepts dynamically, rather than statically, thus promoting students to explore, conjecture, and generalize/prove.

Questions to ponder when considering using technology:

* What can you/the students do with technology that you/they otherwise could not?
* Will the use of (this) technology improve student cognition?
* Will the technology engage the students in a meaningful way toward mathematics?

What sort of technology have we explored in EDC430 so far?

* Graphing Calculators, e.g. TI-73, TI-84+, TI-nSpire (See: <http://education.ti.com/educationportal/sites/US/homePage/index.html> and <http://education.ti.com/calculators/downloads/US/Activities/> )
* Calculator Based Laboratory (CBL), such as the distance probe (see for example, <http://education.ti.com/calculators/downloads/US/Activities/Detail?id=4649> )
* On-line Applets: The National Library of Virtual Manipulatives (<http://nlvm.usu.edu/> ), NCTM: Illuminations (<http://illuminations.nctm.org/> )
* Dynamic algebra and geometry software: TI-Nspire calculators (<http://education.ti.com/educationportal/sites/US/homePage/nspire-family.html> ), Geogebra (<http://www.geogebra.org/cms/> and <http://www.geogebra.org/forum/> ), Geometer’s Sketchpad (<http://www.dynamicgeometry.com/> )
* Web Communities such as ShowMe ([www.showme.com](http://www.showme.com)) and VoiceThread (www.voicethread.com).